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EXAMINER

NGUYEN, KIET TUAN

ART UNIT PAPER NUMBER

2881

DATE MAILED: 05/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/559,345

Applicant(s)

Murakoshi et al.

Examiner

K. Nguyen

Group Art Unit

2881

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 02-24-03

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1, 5, 21-22 and 24-25 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1, 5, 21-22 and 24-25 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received

in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

Objected Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the arc in conjunction with the filament, and means for introducing the vapor generated in the oven into the chamber almost perpendicularly to the arc as recited in claim 22; and the particles having shape and size of the ion source material as recited in claims 24-25 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Rejection Under 35 U.S.C. 112, Second Paragraph

Claims 1, 5, 21-22 and 24-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite for reciting the limitation "heating an ion source ... indium iodide (InI)". How is the ion source material heated to producing an ion beam current of not less than 2 μ A effective to generate vapor of the indium iodide (InI)?

Claim 22 is indefinite for reciting the limitation "to form an arc in conjunction with said filament". What and/or How is the arc that is formed in conjunction with the filament?

Rejection Under 35 U.S.C. 112, First Paragraph

Claims 1, 5, 21-22 and 24-25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification is completely silent for reciting the limitations "to produce an ion beam current ... indium iodide (InI)" as recited in claim 1; "to form an arc in conjunction with said filament" as recited in claim 22; and "a particle shape and a particle size ... not more than mm" as recited in claims 24-25. Therefore, the Examiner don't understand how is the ion beam current effective to generate vapor of the indium iodide? What is the arc? And how is the arc that is formed in conjunction with the filament? Additional explanations are needed if applicant insists on including these features in the claims 1, 22 and 24-25 without the insertion of new matter.

Clarification without the introduction of new matter is required.

Rejection Under 35 U.S.C. 102(b)

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Isaka (3-13576).

Claims 1, 5 and 21, as the best understood by the meaning of 35 U.S.C. 112, first paragraph above, are rejected as: Isaka (3-13576) discloses, in fig. 1, an apparatus and/or method for generating and irradiating ions. The apparatus includes a heater 2 for heating indium iodide (InI) 3 contained in a vessel 4 of a cylinder 1; and a filament 51 in a discharge chamber 5 for discharging a gasified indium iodide to producing indium and iodine ions. The InI is heated at the temperature of not lower than 300 °C and not higher than 500 °C to vaporize the InI. The vaporized InI is discharged by the filament 51 to generate indium (In) ions. The indium ions can be used as the ion source of an ion implantation device for implanting the indium (In) ions onto a substrate. The discharge chamber 5 has two gas inlets for an inert gas 54 and the vaporized InI a.

Rejection Under 35 U.S.C. 103(a)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was

made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 22 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaka (3-13576).

Claims 22 and 24-25, as the best understood by the meaning of 35 U.S.C. 112, first paragraph above, are rejected as: Isaka (3-13576) discloses all the features as discussed above except the chamber having the filament provided on one side surface and a reflector counter electrode provided on a second side surface opposite to the one side surface, and the gas inlet provided on one face of the chamber which is between and perpendicularly the one and the second side surfaces for introducing the vapor into the chamber almost perpendicularly to the arc as recited in claim 22; and the particle of the ion source material having the shape and size not less than 1 mm and not more than 5 mm as recited in claims 24-25.

Using the chamber having the filament provided on one side surface and a reflector counter electrode provided on a second side surface opposite to the one side surface, or the gas inlet provided on the one face of the chamber which is between and perpendicularly the one and the second side surfaces for introducing the vapor into the chamber almost perpendicularly to the arc is considered to be obvious variation in design, since the chamber having the filament provided on one side surface and a reflector counter electrode provided on a second side surface opposite to the one side surface or the gas inlet provided on the one face of the chamber which is between and perpendicularly the one and the second side surfaces for introducing the vapor into the

chamber almost perpendicularly to the arc is well known in the art and in the ion source as disclosed in Murakoshi et al. (10-188833), thus would have been obvious to one skilled in the art to use the chamber having the filament provided on one side surface and a reflector counter electrode provided on a second side surface opposite to the one side surface, or the gas inlet provided on the one face of the chamber which is between and perpendicularly the one and the second side surfaces for introducing the vapor into the chamber almost perpendicularly to the arc in the Isaka (3-13576) apparatus and/or method for generating and irradiating ions.

Applying the particle of the ion source material having the shape and size not less than 1 mm and not more than 5 mm is also considered to be obvious variation in design, since the size and shape of an element is consisting of varying means of that element, thus would have been obvious to one skilled in the art to use the particle of the ion source material having the shape and size not less than 1 mm and not more than 5 mm in the Isaka (3-13576) apparatus and/or method for generating and irradiating ions as Isaka (3-13576) discloses using the particles of indium iodide 3.

Applicant's arguments filed on 02-24-03 have been fully considered but they are not persuasive in view of the foregoing reasons.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner *Kiet T. Nguyen* whose telephone number is (703) 308-4855.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9319.

K.T.N/Primary
May 18, 2003

2003